

APPENDIX B

Discharger Partnership Projects and Watershed Activity Lists

APPENDIX B.1

Discharger Partnership Projects

Special Monitoring Studies

Appendix B.1

Chollas Creek TMDL Implementation Plan Watershed Special Studies

The Chollas Creek Dissolved Metals TMDL Dischargers may conduct special studies within the watershed for the purposes of answering specific watershed questions. For implementation year one, the Dischargers have identified four special studies for consideration. The Dischargers will work in a collaborative manner as conditions warrant.

Special Study #1 – Jurisdictional Boundary Monitoring in the Upper Watershed (Implementation Year 1)

Jurisdictional boundary monitoring in the upper watershed will be conducted to understand the load contribution of permit required constituents. Samples will be collected at station LM-1 in the upper tributary subsurface drainage area of the North Fork of Chollas Creek and in the upper South Fork of Chollas Creek at site LG-1. Storm water monitoring will be conducted during two storm events during the 2009-2010 wet weather monitoring period. The first viable storm after October 1st and the first viable storm after February 1st will be monitored. Monitoring will be conducted simultaneously at the two compliance monitoring stations SD8(1) and DPR2. Samples will be analyzed for organophosphate pesticides (Diazinon and Chlorpyrifos), organochlorine pesticides (Chlordane), PAHs, PCBs, total hardness, and dissolved copper, lead, and zinc, and acute and chronic toxicity to *Ceriodaphnia dubia*. Samples will be collected as flow weighted composites.

Special Study #2 – Activity Assessment Grab Samples for Metals (Implementation Year 1)

Activity assessment grab samples will be collected for source identification studies or for BMP assessments. Samples will be collected from specific land use areas in each priority sector during one wet weather event. Specific locations will be pre-determined prior to the storm monitoring season based on land use, activities, or BMPs and will be decided by the Chollas Creek Dissolved Metals TMDL Dischargers. Samples will be analyzed for total and dissolved metals, TSS, and hardness. Activity assessment sites are proposed within each of the five Priority Sectors, for a total of 20 sites.

Special Study #3 – Synthetic Pyrethroid Assessment Monitoring (Implementation Year 1)

While Diazinon was previously identified as the primary agent associated with pesticide pollution in the San Diego region, Diazinon was phased out of manufacturing and has not been available for retail sale since December 2004. In recent years, synthetic pyrethroids have replaced Diazinon as a pesticide and have been identified as the current causative agent of toxicity to the freshwater amphipod, *Hyalella azteca*, in the Chollas Creek Watershed (Weston, 2007). Under this special study, additional samples will be collected at the permit compliance stations (during three events) and the jurisdictional boundary

Appendix B.1

monitoring sites listed in Special Study #1 (during two events) and analyzed for synthetic pyrethroids, TSS, and toxicity to *Hyalella azteca*. The purpose of this study is to collect data that will be submitted to the Department of Pesticide Regulation (DPR) as part of their synthetic pyrethroid re-registration process. The goal of participation with DPR is to have synthetic pyrethroids banned or placed on restricted use.

Special Study #4 – Bacteria Monitoring (Implementation Year 1)

Samples will be collected and analyzed for total coliform, fecal coliform, and enterococci during storm events at the permit compliance stations (during three events) and the jurisdictional boundary monitoring sites listed in Special Study #1 (during two events). Samples will be collected as grab samples during the peak flow of the storm event.

APPENDIX B.2

Watershed Activity List

CalTrans



Appendix B.2: List of Watershed Activities for Phase I of the Implementation Plan – Department of Transportation (Caltrans)

NOTES:

1. Caltrans considers all watershed activities on this List to be an opportunity for the sharing of information, data, and lessons learned with other Dischargers. Watershed activities identifying potential “Project Partners” (rightmost column of this List) are opportunities for more involved partnering. This partnering may involve project cost sharing, and/or collaboration on project implementation, assessment, analysis, and/or other project activities. This column also identifies existing or potential partnering opportunities with regional Stakeholders.
2. For the purposes of demonstrating the relative size and magnitude of the projects in this list, Caltrans defines project cost ranges according to the following: Low = Less than \$50,000; Medium = Between \$50,000 and \$1,000,000; and High = Greater than \$1,000,000.
3. This list is subject to modification based on the availability of resources and results from other Phase I Implementation Plan projects.

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
Targeted (Watershed Specific) Defined Project for Years 1 to 2 (FY 08/09 and 09/10)									
Tier I	Regulatory/ Legislative: Product Substitution	Brake pad partnership	Caltrans funded work consisting of a watershed modeling effort conducted as part of a larger study examining the potential impact of copper from brake pad wear and debris released to the environment. The objective of the environmental transport and fate modeling is to predict how copper released from brake pads enters the bay and affects both the short-term and long-term concentrations of copper in the bay.	Statewide	Level 4: Load Reduction	Report on findings of the modeling	Are there new products that can replace the current products used for making brake pads?	Ongoing/ TBD	Share outcome data with La Mesa, Lemon Grove, County, Port and Navy.
Tier I	Enforcement: Targeted Facility Inspections	Facilities Pollution Prevention Plan	Annual inspection of Caltrans maintenance stations for storm water compliance.	All sectors	Level 4: Load Reduction	Corrective actions taken to rectify deficiencies.	Are there deficiencies in our maintenance facilities where potential pollutants discharged may reach the creek?	Ongoing/ low	
Tier I	Outreach/ Education: Watershed Advertisement	Don't Trash California	Using a comprehensive, multicultural approach, the <i>Don't Trash California</i> campaign targets primary offenders of highway littering, as well as the general public, to create a social mindset in California that this State does not tolerate polluting our freeways and highways. The campaign will implement proven strategies in the Chollas Creek Watershed, including billboard, bus advertising, partnerships and community outreach to raise the level of awareness of the effects of littering and encourage the public to avoid littering.	All sectors	Level 2: Change in awareness Level 3: Behavioral change and BMP Implementation	Studies have already been done to determine effectiveness of the program. To see some statistics, please visit http://www.donttrashcalifornia.info/pdf/Statistics.pdf	Does education result in lower trash pollution? Does education result in behavioral change or raise awareness?	Ongoing/ Statewide \$41 Million in 2005	City of San Diego, Lemon Grove, La Mesa & County
Tier II	Targeted aggressive Street Sweeping/Street Sweeping	Chollas Watershed increased sweeping	Increase sweeping effort in the watershed, especially in priority sectors before the start of the rainy season and before rain events. Efforts to be coordinated with our maintenance staff.	Sectors 1 & 2	Level 4: Load Reduction Level 5: Changes in Urban Runoff and Discharge Quality	Use source assessment sites monitoring to assess effectiveness and City of San Diego current study	Does sweeping result in less pollutant concentration?	Ongoing/Low	

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
Tier II	Targeted Source Control BMPs/ Homeless Encampment Removal	Homeless Encampment Removal	Eradicate illegal human encampment under bridges along the freeways within the Chollas watershed by paving under bridges and placing cobbles to reduce bacteria, metals and trash loading.	All Sectors	Level 4: Load Reduction	Use source assessment sites monitoring to assess effectiveness	Does eradication of homeless encampment reduce pollutant loading?	Ongoing/Low	
Tier I (Residential)	Outreach/ Education: Watershed Advertisement	Billboards/ Transit Shelters (City project # to be issued)	This project evaluates whether public outreach can be linked to positive behavioral change. These advertisements were displayed in both English and Spanish on billboards and bus shelters, and target behaviors associated with bacteria and gross pollutants (trash) profiled as a vector.	FY08 Transit shelter at 13 th & Imperial FY08 billboards at Fairmount & University and El Cajon & 52 nd Street	Level 2: Change in awareness Level 3: Modification of Behavior through education and outreach	# residents reached through signage Results from public opinion/awareness surveys (randomly selected cohort) Advertising Cost	What changes in awareness /attitude regarding trash and bacteria were achieved after implementation? How efficient is this education activity based on total cost versus number of people (targeted audience) reached?	Start Date: FY08 ANNUAL Program COST: Low	Project Lead: City of San Diego
Tier I (Residential)	Outreach/ Education: Watershed Advertisement	Mobile Advertising – Trash and Bacteria (City project # to be issued)	This project evaluates whether public outreach can be linked to positive behavioral change. These advertisements were displayed in both English and Spanish on City-owned static billboard trucks. During FY08, there were 522,300 impressions in Chollas Creek due to these advertisements.	Static billboard trucks driven through the Chollas Creek Watershed, Sectors 1 and 2 targeted	Level 2: Change in awareness Level 3: Modification of Behavior through education and outreach	# residents reached through signage Results from public opinion/awareness surveys (randomly selected cohort) Advertising Cost	What changes in awareness /attitude regarding trash and bacteria were achieved after implementation? How efficient is this education activity based on total cost versus number of people (targeted audience) reached?	Planning Start Date: FY08-09 Assessment: FY08 ANNUAL Program COST: Low	Project Lead: City of San Diego
Tier II	Special Studies: Pollutograph Studies	Chollas Creek Design Storm Study and Sediment and Bacteria Relationship Source Study (City-26-1)	Project includes collecting and analyzing pollutograph samples from Chollas Creek Watershed and two other watersheds to determine a recommended approach to the BMP design storm to be used in TMDL implementation. The main portion of the study will be completed in FY 09, but the bacteria portion of the study will be completed in FY10.	TBD	Level 1: Completed study (recommended design storm)	Completed study and final report	When is a storm “too large” to apply the TMDLs? What size storm results in WLA exceedances despite BMP implementation?	Start Date: FY08 (baseline) End Date: FY10 COST: Medium	Project Lead: City of San Diego
Tier II	Special Studies: Source Studies	Special Study #1: Jurisdictional Boundary Monitoring in the Upper Watershed	Storm water monitoring will be conducted during two storm events during the 2009-2010 wet weather monitoring period. Monitoring will be conducted simultaneously at the two compliance monitoring stations SD8(1) and DPR2. Flow weighted composite samples will be analyzed for organophosphate pesticides (Diazinon and Chlorpyrifos), organochlorine pesticides (Chlordane), PAHs, PCBs, total hardness, and dissolved copper, lead, and zinc, and acute and chronic toxicity to <i>Ceriodaphnia dubia</i> .	Boundary between Lemon Grove and the City of San Diego (LG-1), Boundary between La Mesa and the City of San Diego (LM-1)	Level 1: Completion of Study	Completed study and final report	What are the pollutant loads at the City’s boundary? Can those loads be linked to near by sources?	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego, City of Lemon Grove, City of La Mesa

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
Tier II	Special Studies/ Pollutant source ID	Roadside Vegetated Treatment Sites (RVTS) Study	The Roadside Vegetated Treatment Sites (RVTS) Study is a multi-year project to evaluate the effectiveness of existing vegetated side slopes adjacent to freeways in removing contaminants from storm water runoff.	Statewide	Level 1: Compliance with activity based permit requirements. Level 4: Load Reductions. Level 6: Improved Receiving Water Quality.	(1) The changes in contaminant concentration as the runoff proceeded from the edge of pavement through each vegetated slope, and (2) the load reduction caused by storm water infiltration into these vegetated slopes.	How effective is the existing vegetation along the freeway, which is part of the standards roadway design, at pollutant removal? http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment BMP Technology Rprt.pdf	Ongoing/High	Results of studies to be shared with All Dischargers
Tier II	Special Studies/ Pollutant source ID	Strom Water Monitoring and BMP Development Studies	Caltrans has an ongoing program to develop and monitor treatment BMPs and source control BMPs, as well as conduct storm water characterization studies. Treatment technology pilot studies are designed to gather definitive cost and performance data. Successfully piloted technologies may be considered for approval and listing in the Storm Water Management Plan (SWMP) as BMPs to be implemented in highway projects according to SWMP guidelines. Source control studies follow a similar process.	Statewide	Level 1: Compliance with activity based permit requirements. Level 4: Load Reductions. Level 6: Improved Receiving Water Quality.	Monitoring results published by Caltrans HQs.	What are the design criteria, Operations, maintenance & construction requirements, treatment effectiveness, costs, advantages and constraints? http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment BMP Technology Rprt.pdf	Ongoing/High	Results of studies to be shared with All Dischargers

APPENDIX B.3

Watershed Activity List

City of San Diego



Appendix B.3: List of Watershed Activities for Phase I of the Implementation Plan – City of San Diego

Preface

The City of San Diego (City) is committed to protecting and improving water quality in the San Diego Region. Clean water at our beaches, bays, canyons and creeks are critical to the health and quality of life for San Diego's citizens, the environment and the local economy.

A comprehensive set of storm water regulations serve as the foundation for the City's storm water quality protection efforts. As part of the City's Municipal Storm Water National Pollutant Discharge Elimination System Permit, the City must implement a Jurisdictional Urban Runoff Management Program, six Watershed Urban Runoff Management Programs, and a Regional Urban Runoff Management Plan in cooperation with other stakeholders and agencies. In addition, the City is required to implement two Total Maximum Daily Load (TMDL) programs in the Chollas Creek Watershed in cooperation with other stakeholders and agencies (the Chollas Creek Diazinon TMDL and the accompanying Implementation Plan for Dissolved Copper, Lead and Zinc). In addition, a pending TMDL for sediment toxicity at the mouth of Chollas Creek is anticipated to be developed by the Regional Water Quality Control Board. While each of these programs are individually designed to protect water quality, and in some cases individual pollutants, the City recognized the potential for significant program inefficiencies and overlap if regulations are not carefully considered in combination.

During the development of the Chollas Creek Dissolved Metals TMDLs in 2006, the City's Storm Water Department recognized the need for an integrated, comprehensive program addressing multiple pollutants and regulations to ensure that the City's efforts are efficiently protecting water quality. However, the storm water quality protection "industry" is relatively new, and the most effective combination of activities and programs is not yet fully known. To determine what combination of programs and activities would be most effective in improving water quality and complying with the above existing and anticipated regulations, the City developed the Strategic Plan for Watershed Activity Implementation (Strategic Plan) in 2007. This strategic planning document represents the City's adaptive management strategy for identifying the most efficient combination of programs and activities to address the Chollas Creek Dissolved Metals TMDLs as well as other regulations. The Strategic Plan's tiered and phased approach forms the basis for the Integrated TMDL Watershed Approach in this Implementation Plan. Phase I of this Implementation Plan represents the first iterative assessment phase, and the following represents the City most recent list of watershed activities.

The City is committed to an integrated, multi-pollutant approach to address dissolved metals TMDLs and other TMDLs, and this Implementation Plan serves as a first iteration of this approach. The City will continue to work with Regional Board staff, community stakeholders, and other agencies to refine the Plan and explore more efficient approaches to protecting and improving water quality.

Appendix B.3: List of Watershed Activities for Phase I of the Implementation Plan – City of San Diego*

The City of San Diego considers all watershed activities on this list to be an opportunity for the sharing of information, data, and lessons learned with other Dischargers. Watershed activities identifying potential “Project Partners” (right column) are opportunities for more involved partnering. This partnering may involve project cost sharing, and/or collaboration on project implementation, assessment, analysis, and/or other project activities. This column also identifies existing or potential partnering opportunities with regional stakeholders. All projects on this Watershed Activities List may be adjusted by the City of San Diego based on the assessment outcomes of implemented watershed activities, the availability of resources, and overall implementation schedule. Modifications to this List will be completed in accordance with the Integrated TMDL Watershed Approach.

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
Targeted (Watershed Specific) Defined Project for Years 1 to 2 (FY 09/10 and 10/11)									
Tier I	Storm Drain System Characterization Study	Chollas Creek Watershed Storm Drain System Characterization Study	Source ID study for legacy pollutants relating to the pending sediment toxicity and benthic community degradation TMDL at the mouth of Chollas Creek. Study will assess existing upstream data and determine data gaps. Primary constituents of concern are Chlordane, PCBs, and PAHs. Monitoring to characterize the storm drain system during wet and dry weather. Wet weather will consist of pollutograph sampling with water, sediment, and toxicity analyses. Dry weather will consist of water and sediment analyses. Follow up samples may be necessary at some locations.	Chollas Creek Watershed within the City of San Diego	Characterization of the City’s storm drain system for the primary constituents: Chlordane, PCBs, and PAHs.	Analyze samples and evaluate analytical results, comparing the results to the Water Quality Objectives (WQOs) and regulatory requirements, and documenting into a report.	What is the concentration of the primary constituents of concern in the storm drain system.	Start Date: FY09 End Date: FY10 COST: Moderate	
Tier I	Regulatory/ Legislative: Basin Plan Beneficial Use Designation	Chollas Creek Use Attainability Assessment (to be issued project #)	Project focused on the assessment of the designated beneficial uses of Chollas Creek and their applications to the water quality requirements under the bacteria TMDL, and whether a Use Attainability Assessment (UAA) was applicable. The project included surveys of the creek and evaluation of the uses of the Creek prior to the Basin Plan adoption.	Listed sections of Chollas Creek and the Mouth of Chollas Creek	Level 1: Determination of Applicability UUA for the REC-1 and Shellfish Beneficial Use	Report on the findings of the surveys and evaluation of historical documents	Are the designated beneficial uses of the creek and mouth of the creek appropriate?	Start Date: FY07 End Date: FY09 COST: Low	
Tier I (Roads, Construction Commercial, Industrial)	Regulatory/ Legislative: Enhanced Development Standards	Identifying and Modifying Barriers to LID Techniques, Rain Harvesting, and Water Reuse (to be issued project #)	A goal of this project goal is to integrate with other sustainable design efforts such as water reuse, LEED sustainable design, etc. This project involves a City-wide review of Municipal Code, development regulations, and design standards to determine barriers/conflicts to using LID and other BMP types within new development and redevelopment, where applicable.	City-Wide	Level 1 (potential): Code Modification, Policy Modification, if appropriate Level 2: Change in knowledge/ awareness in City staff that handles the development permitting process and developers who are subject to the permitting process Level 3:	To Be Determined based on the findings of the Municipal Code review	What are the barriers to implementing LID and preferred storm water practices in development and redevelopment, specifically regarding City regulations? If appropriate, what benefits are associated with modifying the regulations and standard guidance documents to overcome the barriers and conflicts?	Start Date: FY09 End Date: FY12 COST: Low	Lemon Grove Discharger may share results of the review and code modification process, and its outcomes to help guide the City in their process.

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
			compared to mechanical sweepers regarding their effectiveness to remove debris and the metals contained in the debris. The frequency of the sweeping is also assessed regarding increased pollutant removal as well as acceptance by the public. During the FY08 program, 74,340 pounds of debris was removed from the streets.		sediment, PAHs, pesticides)	Implementation Cost	What is the most cost effective frequency that is publicly acceptable? - Same data as above question along with the frequency of sweeping for each sweeper.		
Tier II (Residential, Commercial)	Trash/Debris Cleanup	Groundwork San Diego Chollas Creek Family Stream Team Partnership (to be issued project #)	Trash bins will be strategically placed in the Chollas Creek Watershed for residents to drop-off trash. This project will be combined with an education and outreach component to inform residents about appropriate trash disposal behaviors and about the free drop-off bins.	Four Sites: Jackie Robinson YMCA, 42 nd / National, Southcrest Park, 38 th and Alpha Park	Level 2: Public Awareness Level 3: Modification of Behavior Level 4: Runoff and Load Reductions	TBD	What is the load reduction associated with the free trash bins?	Start Date: March 09 End Date: March 10 COST: Low	Project is in partnership with Groundwork Chollas, Port, Urban Corps, Coastkeeper
Tier II (Discharger Facilities)	Runoff Reduction/ Incentive Program	Rain Barrels/ Downspout Disconnect Project (City-12-1)	Project will reduce storm water flows by capturing runoff from roof structures and gutters at Southcrest Recreation Center. Project will include two rain barrel systems and three combined rain barrel and bioretention planter system. All systems will be connected to a pump/timer configuration which will irrigate vegetated areas.	Southcrest Recreation Center	Level 2: Public Awareness of rain barrels Level 4: Runoff and Load Reductions	Runoff volume captured Load reduction Maintenance Hours Implementation Cost	What is the effectiveness/efficiency of rain barrel/rain-harvesting systems in reducing stormwater runoff volume? Which system results in the largest load reductions?	Planning Start Date: FY07 End Date: FY10 COST: Low	County
Tier II (Eating and Drinking, Commercial, Roads)	Inlet Trash/Debris Segregation BMP	Trash Segregation BMP Installation (to be issued project #)	This project is coordinated with the targeted aggressive street sweeping program. Inlet devices are installed to capture trash/debris prior to conveyance into local waterbodies. Due to long-term high maintenance issues, this BMP will first be piloted with aggressive street sweeping to assess the maintenance requirements compared to their trash removal effectiveness. The use of a multi-catchment /drainage area approach to trash removal (e.g., hydrodynamic separator at the MS4 outfall) may need to be used as part of a treatment train Tier III approach.	Commercial corridor along El Cajon Blvd.	Level 4: Runoff and Load Reductions	Load and runoff reductions Maintenance Hours Implementation Cost	What is the load reduction associated with trash segregation devices? How efficient are trash much maintenance is required for trash segregation devices?	Start Date: FY08 Construction/ Assessment Start Date: FY10 COST: Low	La Mesa Coordinate efforts for future Bacteria Treatment Insert Pilot Study
Tier II (Auto, Commercial, Roads)	Low Impact Development Pollution Control BMP: Green Mall	43rd and Logan Street Upgrades and “Green Mall” Project (to be issued project #)	This project is still undergoing planning efforts. A combined green street and green mall project will be implemented to filtrate a design storm event. Project will include installing bioretention areas and LID filtration techniques and replacing impervious hardscapes with porous concrete sidewalks.	Intersection of 43rd and Logan Street	Level 1 Level 4: Runoff and Load Reductions	Load reduction Maintenance Hours Implementation Cost	What is the load reduction efficiency of LID BMP retrofits? How effective are LID BMP retrofits at reducing loads of priority pollutants? Does the implementation of LID BMP retrofits result in a detectible receiving water quality improvement?	Engineering Design Start Date: FY09 <i>Potential</i> Construction Start Date: FY10 (<i>on fast track when implemented</i>) COST:	

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
Tier I (Residential, Commercial, Industrial, Pesticide)	Regulatory/ Legislative: Product Substitution	Addressing Copper Sulfates (to be issued project #)	The project would utilize education and outreach efforts targeting use of products containing copper sulfates, such as pesticides (through integrated pest management program), algaecides, etc.	City-wide	Level 2: Change in awareness Level 3: Modification of Behavior through education and outreach		TBD	Start Date: FY13 COST: Low	
Tier I (Residential, Commercial, Industrial, Auto)	Regulatory/ Legislative: Product Substitution	Supporting SB757 Legislation: Lead Tire Weight Ban (to be issued project #)	The project could potentially involve supporting bill SB757 which would ban the use of lead tire weights provided that an appropriate substitute material is identified.				TBD	Start Date: FY13 COST: Low	
Tier I (Residential, Commercial, Industrial)	Regulatory/ Legislative: Code Modification	Consider Alternatives to Architectural Copper (to be issued project #)	This watershed activity would formally adopt a ban, or create restrictions, on the use of architectural copper in outdoor applications. Prohibiting or limiting use of copper in rain gutters, roofing, and other outdoor applications, would prevent copper from entering the MS4 system from New Development.	City-wide	-	-	TBD	Start Date: FY13 COST: Low	
Tier I	Special Study: Source Identification	Porous Friction Course Overlays (to be issued project #)	Porous friction course overlays may reduce total suspended solids from roadways. This project would involve a desktop review of this type of roadway retrofit for load reductions and water quality benefits. Based on the recommendations of the report, a pilot study may be implemented within the watershed.	Desktop Review	Level 1: Completion of Study	Completed study and final report	TBD	Start Date: FY12 COST: Low	
Tier II (Parks, Pesticides, Discharger Facilities)	Low Impact Development Pollution Control BMP: Green Lot, Infiltration Vault, Integrated Water Use Project	Southcrest Park Large Infiltration BMP (City-14-1)	Project will incorporate various LID approaches in an integrated manner. Existing asphalt roads and parking lot will be replaced with porous pavement. Underground infiltration units will be placed in large park area. Rain barrels and planters will be installed at Recreation Center to collect roof runoff (see Rain Barrels project). Project will require Conceptual Design, Final Design and Baseline Monitoring before implementation.	Southcrest Park 4149 Newton St. San Diego, 92113	Level 1 Level 4: Measurable Runoff Reduction	Load and runoff reductions Maintenance Hours Implementation Cost	Does the implementation of an LID BMP retrofit result in a detectible receiving water quality improvement? Has the LID BMP retrofit optimized its efficiency (i.e., pollutant load reduction/cost)? What is the optimal efficiency of LID BMP retrofits, so that the City can direct resources to the most efficient programs?	Engineering Design Start Date: 09/15/08 Baseline Monitoring: FY09 <i>Potential</i> Construction Start Date: FY12 COST: Medium	Port Opportunity to share education and outreach efforts at the 38 th /Alpha project.

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
	Hydromod. BMPs Integrated Multi-Treatment Train System							COST: High	
Tier III (Residential, Commercial, Roads, Boat Repair)	Integrated Multi-Treatment Train System	TBD – Limited Low-Flow Storm Drain Inlet Multi-Pollutant Treatment System (to be issued project #)	Project is still undergoing conceptual design. This type of project would involve installing inlet devices to remove gross solids and filter other pollutants (e.g., oil and bacteria) from low flow runoff before discharge into the MS4.	Chollas Creek Watershed, targeting Sectors 1-3	Level 4: Load Reduction	TBD	TBD	COST: High	
Ongoing Agency-wide Projects for Years 1 to 5									
Tier I (Auto, Residential, Commercial, Eating and Drinking, Construction Industrial)	-	Modification of City Fact Sheets (City-5004)	The City continues to update Storm water Fact Sheets, as needed. Current efforts focus on changes resulting from the 2007 NPDES permit. The City is working with other regional Copermittees on these efforts (i.e. partnering with the City of Escondido on the Green Wrench Guide). Future efforts may include information about low impact development or modifications to City codes and/or design standards.	City-Wide	Level 2: Change in awareness	Public familiarity with the Fact Sheets (phone survey, questionnaires, inspections, etc)	-	ONGOING COST: Low	All Dischargers Dischargers may participate in Think Blue program (funding) or coordinate fact sheet modification efforts.
Tier I (Industrial)	-	Enforcement Referrals (City-5005)	The City reports any "non-filers" under the General Industrial Permit to the Regional Board found during the annual industrial/commercial inspections program. In the future, the City may initiate dialogue (education and outreach) with the current Permitted industries about the types of water quality data and possibly coordinating efforts on special studies.	Citywide	Level 1 Level 2: Industry Awareness	Number of “non-filers” reported	-	ONGOING COST: Low	
Tier I (Residential, Commercial, Boat Repair, Eating and Drinking, Landscaping Pesticides)	-	Booths at major events (City-5006)	During City sponsored events, educational materials are distributed to the public. The City has sponsored booths at the Del Mar Fair, December Nights, San Diego Boat Show	Chollas Creek Watershed	Level 2: Change in awareness Level 3: Modification of Behavior through education and outreach	# posted advertisements or pamphlets distributed Results from public opinion/awareness surveys (as applicable) Advertising Cost	-	ONGOING COST: Low	All Dischargers Dischargers may participate in Think Blue program (funding) or provide staff at events.

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
Tier I Construction	-	Construction Site Inspections - Sediment/ Metals (City-5007)	Inspectors within the Field Engineering and Inspection Services Divisions inspect construction sites and issue correction notices and/or stop work orders for code violations. The Field Engineering Division has created and implemented a special correction notice that is issued for storm water violations in need of immediate solution.	City-wide	Level 2: Change in awareness Level 3: Modification of Behavior through enforcement	Total Inspections Timliness of Inspections	-	ONGOING COST: Low	All Dischargers Work towards standardizing Discharger inspections across watershed (WURMP workgroup).
Tier I (Discharger Facilities)	-	Municipal Facility Inspections (City-5008)	Municipal facilities are inspected for compliance with the requirements of the NPDES Permit. During these inspections, facilities are also inspected for activity specific BMPs and all designated pesticide, herbicide, and fertilizer BMPs required by the FY08 JURMP. Municipal Treatment Control BMPs are inspected for completeness, cleanliness, and other factors.	City-wide	Level 2: Change in awareness Level 3: Modification of Behavior through enforcement	Total Inspections Timliness of Inspections	-	ONGOING COST: Low	
Tier I (Industrial, Commerical Facilities)	-	Industrial/ Commercial Inspections Program	The City inspects prioritized industrial and commercial facilities per the Municipal Permit and, for facilities that do not comply with the City's Municipal Code, takes enforcement action.	City-wide	Level 1: Annual Compliance	Number of prioritized facilities inspected	-	ONGOING Cost: Medium	All Dischargers Work towards standardizing Discharger inspections across watershed (WURMP workgroup).
Tier II (Roads)	-	Storm Drain Cleaning (City-5009)	Each year the City of San Diego cleans storm drain infrastructure. Approximately 434 tons of debris was removed during FY08. These efforts help reduce the trash and bacterial loading.	City-wide	Level 1: Annual cleaning Level 4: Load Reduction	Load reductions Maintenance Hours Implementation Cost	-	ONGOING COST: Low	
Tier II (Roads, Commercial, Residential)	-	Street Sweeping (City-5010)	Street sweeping is being implemented across the City of San Diego as well as in the Chollas Creek watershed.	City-Wide, Chollas Creek	Level 4: Measurable Load Reduction	Load reduction determined using: Debris Weight # Broom Miles Swept Implementation Cost	-	ONGOING COST: Medium	
Tier II (Residential)	-	Clean Up Events (City-5011)	During City sponsored clean up events (resulting from specific calls for service and community cleanup efforts), volunteers and City workers remove trash and debris from the watershed. During FY08, the City of San Diego responded to or sponsored 7,210 calls of service (trash related) and cleanup events in the watershed. Approximately 3,931.79 tons of trash and debris were removed in this watershed through these efforts in FY2008.	City-Wide, Chollas Creek	Level 2: Public Awareness Level 3: Modification of Behavior Level 4: Runoff and Load Reductions	# participants Trash Load reduction	-	ONGOING COST: Low	Opportunity to partner with Groundwork Chollas, Urban Corps, Coastkeeper, Alpha Project

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	PROJECT SCHEDULE/ COST	POTENTIAL PROJECT PARTNERS
Tier I	-	Illicit Discharge Detection and Elimination	The City actively seeks and eliminates discharges to the storm water conveyance system. Code Compliance Officers respond to enforce the Storm Water Ordinance and cite/educate businesses and residents who reportedly violate the ordinance with illegal discharges.	City-wide	Level 1: Compliance Level 2: Public Awareness Level 3: Modification of Behavior	Number of calls reported and responded	-	ONGOING COST:	
Tier I	-	SUSMP and Development Regulations	The City incorporates SUSMP requirements on applicable development and redevelopment projects City-wide. Depending on the type and size of the projects, SUSMP requirements could include site design, source controls, and treament controls such as LID.	City-wide	Level 1: Compliance	Projects permitted subject to SUSMP	-	ONGOING	
Tier I	-	Household Hazardous Waste Collection Program	The City’s Environmental Services Department runs this program which seeks to eliminate illegal discharges associated with the improper use and disposal of household hazardous materials. Methods include one-day collection events, a permanent collection facility, and education programs.	City-wide	Level 1: Compliance Level 2: Public Awareness Level 3: Modification of Behavior	Tons of household hazardous waste collected	-	ONGOING	

GLOSSARY

San Diego Coastkeeper: Coastkeeper is a locally-based nonprofit organization which works to protect the region's bays, beaches, watersheds, and oceans (<http://sdcoastkeeper.org/>).

COST – Low: Project costing less than \$100,000 to implement.

COST – Medium: Project costing between \$100,000 and \$1,000,000 to implement.

COST – High: Project costing more than \$1,000,000 to implement.

Groundwork San Diego Chollas Creek (Groundwork Chollas): Groundwork Chollas is a nonprofit organization which works with San Diego's southeastern canyon communities to improve the environment, economy, and quality of life through local action by getting people, business, government and other organizations involved in practical projects.

Impression: Number of times an individual is exposed to a City outreach advertisement.

I Love a Clean San Diego (ILACSD): ILACSD is a 501(c)(3) nonprofit organization which works to promote regional awareness of environmental issues including resource conservation, waste reduction and recycling, community enhancement, and pollution prevention (<http://www.ilacsd.org/>). The CBSM outreach program is based on the ILACSD program, which in turn is based on the national Keep America Beautiful methodology.

PROJECT NUMBERING CONVENTION

The City has adopted the activity numbering convention developed by the San Diego Bay WURMP Workgroup. The WURMP Workgroup numbers were modified with "City" and a project specific number (City-WURMP#-#). In the event that other Copermittees in the San Diego Bay WURMP Workgroup adopt a similar naming convention, projects may be distinguished using this leader value (i.e. City #, Port #, Lemon Grove #, et cetera).

Watershed activities which have yet to be assigned a San Diego Bay WURMP Workgroup number were flagged "to be issued project #."

Watershed activities which occur in other watersheds (i.e. Tecolote Creek Bacteria Source Studies) and are not reported in the San Diego Bay WURMP. Ongoing Agency-wide Projects are also beyond the scope of the San Diego Bay WURMP Workgroup numbering system. The City of San Diego has adopted an alternative numbering system of: City-5001, 5002, 5003, etc. The current Watershed Activity List includes eleven projects numbered using this system.

The City does not reuse numbers. Once an activity has been completed or canceled, the number will be retired from use.

APPENDIX B.4

Watershed Activity List

City of La Mesa



Appendix B.4: List of Watershed Activities for Phase I of the Implementation Plan – City of La Mesa*

This List is subject to modification based on the availability of resources and results from other Phase I Implementation Plan projects.

The City of La Mesa has defined project implementation costs as follows:

LOW – less than \$10,000

MEDIUM - \$10,000 - \$25,000

HIGH – greater than \$25,000

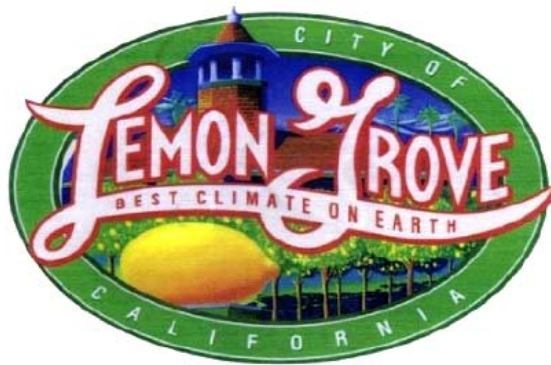
TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPOR-TUNITY
Targeted (Watershed Specific) Defined Project for Years 1 to 2 (FY 08/09 and 09/10)									
Tier I Commercial, Industry	Regulatory/ Legislative: Enhanced Development Standards	Code Modification	Code update/regulations pertaining to Chollas Watershed. For example, new businesses along University Channel will be required to consider BMPs associated with the pollutants identified in the TMDL.	Sector 4	Level 1: Completion of Code Modification	Adopted Codes Assessment Report	What are the barriers to modifying the storm water codes in the Chollas Creek Watershed?	Start Date: July 2009 End Date: July 2012 COST: Low	
Tier II	Special Studies: Source Studies	Special Study #1: Jurisdictional Boundary Monitoring in the Upper Watershed	Storm water monitoring will be conducted during two storm events during the 2009-2010 wet weather monitoring period. Monitoring will be conducted simultaneously at the two compliance monitoring stations SD8(1) and DPR2. Flow weighted composite samples will be analyzed for organophosphate pesticides (Diazinon and Chlorpyrifos), organochlorine pesticides (Chlordane), PAHs, PCBs, total hardness, and dissolved copper, lead, and zinc, and acute and chronic toxicity to <i>Ceriodaphnia dubia</i> .	Boundary between Lemon Grove and the City of San Diego (LG-1), Boundary between La Mesa and the City of San Diego (LM-1)	Level 1: Completion of Study	Completed study and final report	What are the pollutant loads at the City's boundary? Can those loads be linked to near by sources?	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego, City of Lemon Grove, and Caltrans
Tier I Residential	Outreach/ Education: Watershed Advertisement	Educational Kiosk Pilot Study	Educational material about the water quality problems in the Chollas Creek Watershed (Watershed Fact Sheet) will be posted in a specially designed kiosk. La Mesa may implement additional educational kiosks at other locations in the future.	Sector 4, Vista La Mesa Park	Level 2: Change in Awareness Level 3: Modification of Behavior through education and outreach	Results from public opinion/awareness surveys – <i>C. of San Diego survey data</i>	Is watershed advertisement an effective outreach tool?	Start Date: July 2009 End Date: July 2012 COST: Low	City of San Diego Assess project by using City's effectiveness survey data for watershed advertisement
Tier I Residential	Outreach/ Education: Watershed Advertisement	Schools Education and Outreach Program	Education and outreach program at local schools within the Chollas Creek Watershed in partnership with the I Love A Clean San Diego. This program will be implemented at an elementary school, a middle school, and a high school. Possible schools include: La Mesa Middle School, Helix High School, and La Mesa Dale.	Sector 4	Level 2: Change in awareness Level 3: Modification of Behavior through education and outreach	# outreach events held (children educated) Survey	What level of awareness do students have about water quality in the Chollas Creek Watershed?	Start Date: Spring 2009 End Date: To Be Determined COST: Low	In Partnership with I Love a Clean San Diego
Tier II Roads, Commercial	Special Studies: Source Studies	Metals Source ID Study	This source ID study includes an assessment of urban runoff from a major, mixed-use parking lot in La Mesa (super market with additional shops). The load contribution of the parking will be also assessed. This project includes an education and outreach component to	Sector 4	Level 1: Completed study (understanding of metals sources) Level 2: Change	Completed study and final report	What are the loads and sources of metals from larger parking lots?	Start Date: FY08 End Date: FY09	

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPOR-TUNITY
			open dialogue with property management.		in awareness			COST: Low	
Planned Projects for Years 3 to 5 (FY 10/11, 11/12 and 12/13)									
Tier III Roads, Residential, Industry, Commercial, Eating/ Drinking	Bacteria Treatment BMPs	Bacteria Treatment Insert Pilot Study	Selected catch basins in the Chollas Creek Watershed will be retrofitted with a treatment sponge insert. The number and location of these inserts (and bacteria sponges) is still to be determined.	Sector 4	Level 4: Load Reduction	Load Reduction	What is the load reduction associated with bacteria sponges?	Start Date: FY12 End Date: FY13 COST: Medium	City of San Diego Technology assessment from Trash Segregation BMP Installation activity.
Ongoing Agency-wide Projects for Years 1 to 5									
Tier II Residential, Commercial	-	Clean Up Events	Cleanup Events will be held twice a year at University Channel (Creek to Bay Clean Up and the California Coastal Day). Each event will include an education and outreach component.	University Avenue	Level 2: Public Awareness Level 3: Modification of Behavior Level 4: Runoff and Load Reductions	# participants Trash Load reduction Educational Survey	What is the load reduction of trash/debris that is disposed through these efforts? What level of awareness does the public have about water quality in the Chollas Creek Watershed?	Start Date: September 2008 ONGOING COST: Low	
Tier I Auto, Roads, Industrial, Commercial, Eating/ Drinking	Enforcement: Targeted Facility Inspections	Targeted Metals- Related Businesses – Inspections Pilot Study	Annual business inspections will include a supplemental questionnaire specific to the Chollas Creek Watershed and targeting businesses along University Channel.	Sector 4, Businesses along University Avenue	Level 1: Completion of Inspections Level 2: Public Awareness	List of types of activities for various businesses and potential pollution prevention activities Cost of inspections	What are the load potential contributions of various businesses in the Chollas Creek Watershed?	Start Date: Summer 2008 ONGOING COST: Low	City of San Diego Share inspection results and processes from City-8-1, City-8-2, and City-8-3. Port Standardize inspections across watershed (WURMP workgroup).

APPENDIX B.5

Watershed Activity List

City of Lemon Grove



Appendix B.5: List of Watershed Activities for Phase I of the Implementation Plan – City of Lemon Grove*

This List is subject to modification based on the availability of resources and results from other Phase I Implementation Plan projects.

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPOR-TUNITY
Targeted (Watershed Specific) Defined Project for Years 1 to 2 (FY 08/09 and 09/10)									
Tier II	Special Studies: Source Studies	Special Study #1: Jurisdictional Boundary Monitoring in the Upper Watershed	Storm water monitoring will be conducted during two storm events during the 2009-2010 wet weather monitoring period. Monitoring will be conducted simultaneously at the two compliance monitoring stations SD8(1) and DPR2. Flow weighted composite samples will be analyzed for organophosphate pesticides (Diazinon and Chlorpyrifos), organochlorine pesticides (Chlordane), PAHs, PCBs, total hardness, and dissolved copper, lead, and zinc, and acute and chronic toxicity to <i>Ceriodaphnia dubia</i> .	Boundary between Lemon Grove and the City of San Diego (LG-1), Boundary between La Mesa and the City of San Diego (LM-1)	Level 1: Completion of Study	Completed study and final report	What are the pollutant loads at the City's boundary? Can those loads be linked to near by sources?	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego, Caltrans, and City of La Mesa
Tier 1 Municipal and Land Developmen t	Legislative: Municipal Code and General Plan Amendments	Sustainability Policy and Green Building Policy	To update the City's Municipal Code and General Plans to include green building concepts including LID and create a sustainability policy for overall City functions.		Level 1	Amendment adoption Plan Development Approval Process	What are the barriers in existing documents that hinder green development? What are the barriers in current policy that hinder sustainable practices across City Departments?	Start date: March 2009 End date: TDB	
Tier 2 Roads, Commercial, Industrial, Residential	Special Study: Boundary pollutant loads	Monitoring at Jurisdictional Boundaries	To gather information about pollutant loads at the jurisdictional boundary.		Level 1	Study completion and report of lab results	What are the pollutant loads at the City's boundary? Can those loads be linked to near by sources?	Start date: FY09 End date: FY10	City of San Diego, Caltrans
Planned Projects for Years 3 to 5 (FY 10/11, 11/12, and 12/13)									
Tier 1 Municipal Tier 3 at implementat ion Municipal	Research and project potential	Initial investigation into the rehabilitation of Chollas Creek along Federal Blvd.	To investigate the options and possibilities for rehabilitating the portion of Chollas Creek that runs parallel with Federal Blvd and HWY 94.		Level 1 at the planning stage Level 5 at completion	Grant application process for project initiation. Monitoring data for pollutant loads pre and post rehabilitation.	What is required for rehabilitation including erosion control, stabilization, correction of surrounding property, invasive species eradication, and long term maintenance requirements as well as many other potential concerns? What do the Monitoring results show pre and post rehabilitation?	Start date: April 2009 End date: TBD (based entirely on funding availability)	City of San Diego and Caltrans
Ongoing Agency-wide Projects for Years 1 to 5									
Tier 2 Residential, Commercial	Public Participation	Clean up Events	Clean up events are held annual in the Chollas watershed or more frequently based on volunteer group availability. Each event will now include a brief post clean up survey.		Level 2 and 4	# of participants Trash Load Reductions Survey data	What is the trash load reduction and is there a decrease based on a comparison with previous events? Are people more aware of the effect of trash and debris on the local watershed?	Start date: April 2009	
Tier 1 Residential	Outreach/ Education	City Newsletter	To provide Watershed specific information in the semi-annual City wide Newsletter. The Newsletter is distributed to all residents, business owners and business tenants in the City. The City will provide updates on		Level 1 and 2	Data collected from surveys	Do people understand the importance of their role in the health of their watershed?	Start date: December 2009 End date: Ongoing	

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPOR-TUNITY
			current programs and TMDL efforts. Will contain a brief survey in future editions pertaining to Watershed knowledge.						
Tier 1 Residential	Outreach/ Education	Water Quality Booth at City Events	To provide water quality and watershed information to the attending public. Obtain survey information pertaining to household BMPs.		Level 1, 2, and 3	Data collected from surveys	What barriers do people have to performing good housekeeping BMPs in the home? What level of awareness of good housekeeping BMPs do people have?	Start date: October 2009 End date: Ongoing	
Tier 1 Industrial, Commercial, Automotive, Eating/Drink ing	Enforcement: Annual facility inspections	Pollutant targeted inspections	Annual facility inspections will include a watershed component to evaluate on site BMPs in reference to potential pollutant generation.		Level 1, 2 and 3	Visual inspections Survey results Follow-up inspections when required	Are businesses adequately aware of the watershed, it's pollutant concerns and their effects on such? Are businesses adequately maintaining on site BMPs to limit any potential pollutants from entering the watershed?	Start date: May 2009	City of San Diego and Port for shared information and potential standardized information
Tier 1 Municipal		Xeroscaping municipal medians	Ongoing rehabilitation of municipal landscaping to include LID concepts, water conservation, and xeroscaping		Level 1, 2 and 3 Potential Level 4 based on water saved	Amount of water saved Rehabilitation of all medians	Can the amount of water saved be equated to a potential pollutant load?	Start date: FY08-09	

APPENDIX B.6

Watershed Activity List

County of San Diego



Appendix B.6: List of Watershed Activities for Phase I of the Implementation Plan – County of San Diego*

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPOR-TUNITY
Targeted (Watershed Specific) Defined Project for Years 1 to 2									
Tier II	Special Studies: Source Studies	Special Study #2: Activity Assessment Grab Samples for Metals	Activity assessment grab samples will be collected for source identification studies or for BMP assessments. Samples will be collected from specific land use areas in each priority sector during one wet weather event. Specific locations will be pre-determined prior to the storm monitoring season based on land use, activities, or BMPs and will be decided by the participating Dischargers. Samples will be analyzed for total and dissolved metals, TSS, and hardness.	Activity assessment sites are proposed within each of the five Priority Sectors, for a total of 20 sites.	Level 1: Completion of Study	Completed study and final report	TBD	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego Port of San Diego, Caltrans
Tier II	Special Studies: Source Studies	Special Study #3: Synthetic Pyrethroid Assessment Monitoring	Additional samples will be collected at SD8(1) and DPR2 (during three events) and LM-1 and LG-1 (during two events) and analyzed for synthetic pyrethroids, TSS, and toxicity to <i>Hyaella azteca</i> . The purpose of this study is to collect data that will be submitted to the Department of Pesticide Regulation (DPR) as part of their synthetic pyrethroid re-registration process. The goal of participation with DPR is to have synthetic pyrethroids banned or placed on restricted use.	Compliance stations and jurisdictional boundary monitoring stations	Level 1: Completion of Study	Completed study and final report	TBD	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego Port of San Diego, Caltrans (tentative partner)
Tier II	Special Studies: Source Studies	Special Study #4: Bacteria Monitoring	Samples will be collected and analyzed for total coliform, fecal coliform, and enterococci during storm events at SD8(1) and DPR2 (three storms) and LM-1 and LG-1 (two storms). Samples will be collected as grab samples during the peak flow of the storm event.	Compliance stations and jurisdictional boundary monitoring stations	Level 1: Completion of Study	Completed study and final report	TBD	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego Port of San Diego, Caltrans
Tier II (Municipal)	LID Pollution Control BMPs: Porous Pavement	Porous Pavement Project at Central Regional Public Health Facility Parking Lot	Removal and replacement of 14,000 square feet of existing impervious pavement with porous pavement and a stone reservoir to capture runoff from the parking lot at the Central Regional Public Health Facility.	5202 University Avenue, San Diego (Sector 2)	Level 4: Load reductions of targeted pollutants	Water quality monitoring	How effective is porous pavement with a stone reservoir at reducing flows and pollutant loads? What is the relative effectiveness of porous pavement to other LID alternatives?	Start Date: January 2009 End Date: June 2011	
Tier II (Municipal)	LID Pollution Control BMPs: Capture/ Infiltration	Capture and Infiltration Project at Comprehensive Health Care Center	Installation of concrete detention/infiltration vaults or equivalent units under two parking lots at the Comprehensive Health Care Center.	3177 Oceanview Blvd., San Diego (Sector 1)	Level 4: Load reductions of targeted pollutants	Water quality monitoring	How effective is capture and infiltration at reducing flows and pollutant loads? What is the relative effectiveness of a capture and infiltration system compared to other LID alternatives?	Start Date: January 2009 End Date: June 2011	
Tier II (Municipal)	LID Pollution Control BMPs: Bio-	Bioswales/ Rain Gardens at Dodson	Installation of three bioswales and two rain gardens at the Dodson House.	551 South 35th St., San Diego (Sector 1)	Level 4: Load reductions of targeted	Water quality monitoring	How effective are bioswales/rain gardens at reducing flows and pollutant loads? What is the relative effectiveness of	Start Date: January 2009 End Date: June	

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPOR-TUNITY
	retention / Bio- infiltration / Filtration	House			pollutants		bioswales/rain gardens compared to other LID alternatives?	2011	
Planned Projects for Years 3 to 5									
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
Ongoing Agency-wide Projects for Years 1 to 5									
Tier I	Commercial Business Inspection & Enforcement	County of San Diego Commercial Business Inspection Program	The County of San Diego performs routine inspection and enforcement of commercial businesses as part of its JURMP. There is one commercial business, a cemetery, within the County’s portion of the Chollas Creek Watershed. It is inspected approximately annually, with follow ups and enforcement performed as necessary.	Greenwood Memorial Park: 4300 Imperial Avenue (Sector 1)	Level 1 Programmatic Outcomes Level 3 Behavioral Modification	Level 1 # Inspections, # Violations Observed Level 3 # Corrective Actions Implemented		Ongoing	
Tier I	Municipal Facility Inspection & Audits	County of San Diego Municipal Facility Inspection Program	The County of San Diego performs routine inspection and audits of municipal facilities as part of its JURMP. There are eight County-operated municipal facilities within the Chollas Creek Watershed. All facilities are inspected twice per year by the department responsible for facility operations. The Department of Public Works supplements routine inspections with periodic audits of facility operations.	Facilities within the Chollas Creek Watershed (San Diego Bay Watershed)	Level 3 Behavioral Modification	Level 1 # Inspections, # Violations Observed Level 3 # Corrective Actions Implemented		Ongoing	
-	-	-	-	-	-	-	-	-	-

* This list is subject to modification based on the availability of resources and results from other Phase I Implementation Plan projects.

APPENDIX B.7

Watershed Activity List

United States Navy



Appendix B.7: List of Watershed Activities for Phase I of the Implementation Plan – United States Navy

This List is subject to modification based on the availability of resources and results from other Phase I Implementation Plan projects.

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPOR-TUNITY
Targeted (Watershed Specific) Defined Project for Years 1 to 2 (FY 08/09 and 09/10)									
Tier I	Pollution Prevention	P2 Plan updated for Naval Base San Diego	Project will update existing P2 plan for Naval Base San Diego. P2 Plan will focus on product substitution and source reduction as preferred methods to reduce and eliminate pollutants in storm water runoff to Chollas Creek.	Naval Base San Diego (Sector 1)	Level 2 Change in awareness, Level 3 behavioral change, Level 4 load reduction	Document P2 initiatives implemented. Record pounds and types of waste generated.	Are sources of pollutants associated with industrial activities affecting the quality of the facility’s industrial storm water discharge into Chollas Creek?	CY09/10	Navy only
Tier I	Reduced Copper and Zinc loading	Evaluation and Minimization Plan for Copper and Zinc in Storm Water	Prepare an evaluation and minimization plan to address sources of copper and zinc in storm water from the base.	Naval Base San Diego Industrial sites (Sector 1)	Level 4 load reduction	Measure copper and zinc in industrial storm water discharges.	TBD	CY09/10	Navy only
Tier II	Trash removal	Creek Trash Removal Program	Program to remove accumulated trash and debris from mouth of Chollas Creek. Trash and debris is captured behind booms strung across the creek. Navy personnel utilize cranes and small boats to removal trash and debris which is transported to the local landfill for disposal. Hazardous substances removed from the creek are stored in a secured area and properly disposed of in accordance with Federal and state laws and regulations. Navy documents weight (tons) of trash and debris removed from creek.	Mouth of Chollas Creek at Naval Base San Diego (Sector 1)	Level 4: load reductions in Creek and San Diego Bay	Report weight (tons) of trash and debris removed from creek.	Are trash and debris volumes trending downward as upstream education programs and cleanup programs are implemented?	Ongoing	Navy partners with City of San Diego to implement this program. City of San Diego has provided funding to the Navy to support implementation.
Tier I/II	Targeted Source Control BMPs; Outreach/ Education: Installation Notices	MS4 Storm Water Management Plan	The Navy is preparing a Storm Water Management Plan for Naval Base San Diego to comply with the Statewide General Permit for storm water. The Management Plan will describe BMPs, measurable goals, and timetables for implementation in the following six program areas: 1. Public Education and Outreach; 2. Public Participation/Involvement; 3. Illicit Discharge Detection and Elimination; 4. Construction Site Runoff Control; 5. Post-Construction Runoff Control; and 6. Pollution Prevention/Good Housekeeping.	Naval Base San Diego (Sector 1)	Level 2 Change in awareness, Level 3 behavioral change, Level 4 load reduction	Track required inspections, audits, and maintenance activities and document in annual report. Track attendance at training and awareness events.	What changes in awareness /attitude regarding minimization of storm water pollution was achieved after implementation? Do targeted inspections increase the rate of BMP implementation and/or result in a load reduction?	CY09 with annual reports thereafter	Navy only

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPOR-TUNITY
Planned Projects for Years 3 to 5 (FY 11/12, 12/13, and 13/14)									
Tier I	Integrated Pest Management	Integrated Pest Management Plan for Naval Base San Diego	Project to develop Integrated Pest Management Plan for Naval Base San Diego. Plan will evaluate pest management alternatives to reduce impact to Chollas Creek, define responsibilities for implementing pest management program, and continue requirement to track pest management applications.	Naval Base San Diego (Sector 1)	Level 2 Change in awareness, Level 3 behavioral change, Level 4 load reduction	Track all pesticide use at the installation and for areas that drain to Chollas Creek.	TBD	CY 10/11	Navy only
Tier III	Low Impact Development	Implement	Implement program to meet Department of Navy Low Impact Development Policy for Storm Water Management to reduce volume and pollutant loading of storm water discharges from Naval Base San Diego.	Naval Base San Diego (Sector 1)	Level 4 load reduction	TBD	TBD	FY11	Navy only
Tier I	Pollution Prevention	P2 Plan updated for Naval Base San Diego	Project will update existing P2 plan for Naval Base San Diego. P2 Plan will focus on product substitution and source reduction as preferred methods to reduce and eliminate pollutants in storm water runoff to Chollas Creek.	Naval Base San Diego (Sector 1)	Level 2 Change in awareness, Level 3 behavioral change, Level 4 load reduction	Document P2 initiatives implemented. Record pounds and types of waste generated.	Are sources of pollutants associated with industrial activities affecting the quality of the facility's industrial storm water discharge into Chollas Creek?	CY11	Navy only
Ongoing Agency-wide Projects for Years 1 to 5									
Tier II	-	Street Sweeping	Street sweeping is conducted at Naval Complexes throughout the region.	San Diego County	Level 4: Measurable Load Reduction	Implementation Cost	What is the load reduction associated with street sweeping?	ONGOING	Navy only

APPENDIX B.8

Watershed Activity List

San Diego Unified Port District



Appendix B.8: List of Watershed Activities for Phase I of the Implementation Plan – Port of San Diego*

The Port of San Diego has defined project implementation costs as follows:

LOW – less than \$25,000

MEDIUM - \$25,000 - \$100,000

HIGH – greater than \$100,000

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPORTUNITY
Targeted (Watershed Specific) Defined Project for Years 1 to 2									
Tier I	Special Study: Hydrodynamics study	Drainage Evaluation	Analyze and assess drainage from Port property to Chollas Creek	Parking lot east of Harbor Drive, north of Chollas Creek	Level 1 Programmatic Outcomes	-	What are the water flow characteristics within the parking lot and what are the potential impacts to Chollas Creek?	Start Date: FY 09/10 Cost: Low	N/A
Tier II	Special Studies: Source Studies	Special Study #2: Activity Assessment Grab Samples for Metals	Activity assessment grab samples will be collected for source identification studies or for BMP assessments. Samples will be collected from specific land use areas in each priority sector during one wet weather event. Specific locations will be pre-determined prior to the storm monitoring season based on land use, activities, or BMPs and will be decided by the participating Dischargers. Samples will be analyzed for total and dissolved metals, TSS, and hardness.	Activity assessment sites are proposed within each of the five Priority Sectors, for a total of 20 sites.	Level 1: Completion of Study	Completed study and final report	TBD	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego County of San Diego, Caltrans
Tier II	Special Studies: Source Studies	Special Study #3: Synthetic Pyrethroid Assessment Monitoring	Additional samples will be collected at SD8(1) and DPR2 (during three events) and LM-1 and LG-1 (during two events) and analyzed for synthetic pyrethroids, TSS, and toxicity to <i>Hyaella azteca</i> . The purpose of this study is to collect data that will be submitted to the Department of Pesticide Regulation (DPR) as part of their synthetic pyrethroid re-registration process. The goal of participation with DPR is to have synthetic pyrethroids banned or placed on restricted use.	Compliance stations and jurisdictional boundary monitoring stations	Level 1: Completion of Study	Completed study and final report	TBD	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego County of San Diego, Caltrans (tentative partner)
Tier II	Special Studies: Source Studies	Special Study #4: Bacteria Monitoring	Samples will be collected and analyzed for total coliform, fecal coliform, and enterococci during storm events at SD8(1) and DPR2 (three storms) and LM-1 and LG-1 (two storms). Samples will be collected as grab samples during the peak flow of the storm event.	Compliance stations and jurisdictional boundary monitoring stations	Level 1: Completion of Study	Completed study and final report	TBD	Start Date: FY09 End Date: FY10 COST: Low	City of San Diego County of San Diego, Caltrans
Tier II	Trash/Debris BMP	Trash Maintenance Program	Install and maintain trash containers in parking lot on Port Tideland off Harbor Drive across from NASSCO	Parking lot east of Harbor Drive, north of Chollas Creek	Level 1 Programmatic Outcomes; Level 3 Behavioral Modification	Inspections; Recording of the quantity and type of trash/debris collected	What is the load reduction associated with trash containers? How efficient is maintenance required for trash containers?	Start Date: FY 09/10 Cost: Low	NASSCO

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPORTUNITY
Tier II	Targeted Source Control BMP: Clean Up Event - Annual Event	Operation Clean Sweep	Cleanup activities in Chollas Creek as part of a bay-wide event. Cleanup of debris in and around the creek bed	Various locations	Level 3 Behavioral Modification and 4 Load Reduction	The quantity and type of trash/debris collected	What is the load reduction of trash/debris that is disposed through these efforts? Does education result in behavioral change or raise awareness? Does education result in lower trash pollution?	Annual event Cost: Medium	San Diego Port Tenants Association, U.S. Navy and San Diego Gas & Electric
Tier II	Creek Habitat Restoration	Chollas Creek Family Stream Team Initiative	Four pronged strategy of education, restoration, enforcement, and evaluation.	Section of Chollas Creek between I 805 and Interstate 5	Level 3 Behavioral Modification and 4 Load Reduction	Number/amount of plants removed or planted, amount and type of debris removed, number of people reached, pre- and post-test surveys, citizen monitoring	Does education result in behavioral change or raise awareness? Does education result in lower trash pollution? What is the load reduction of trash/debris that is disposed through these efforts?	Start Date: FY 08/09 Cost: Medium	Groundworks San Diego, NASSCO, San Diego Canyonlands, Inc., Urban Corps of San Diego, San Diego Coast Keeper
Tier II	Creek Habitat Restoration	Chollas Creek Restoration	Restoration project to remove non-native plant species and replacement with native plants, cleanup of trash and debris, and environmental education	Multiple locations along the Main Branch of Chollas Creek	Level 3 Behavioral Modification and 4 Load Reduction	Number/amount of plants removed or planted, amount and type of debris removed, number of people reached	Does education result in behavioral change or raise awareness? Does education result in lower trash pollution? What is the load reduction of trash/debris that is disposed through these efforts?	Start Date: FY 08/09 Cost: Medium	Sierra Club, Urban Corps of San Diego, Ground work San Diego Chollas Creek
Tier II	Creek Habitat Restoration	Stream Team Stewards	Education for elementary school children: series of classroom sessions and field trips; cleanup, storm drain stenciling and restoration of one acre of the Chollas Creek stream corridor	38th and Alpha	Level 3 Behavioral Modification and 4 Load Reduction	Number/amount of plants removed or planted, amount and type of debris removed, number of people reached	Does education result in behavioral change or raise awareness? Does education result in lower trash pollution? What is the load reduction of trash/debris that is disposed through these efforts?	Start Date: FY 08/09 Cost: Medium	San Diego Zoo, Endangered Habitats League, Groundwork San Deigo - Chollas Creek, ECOLIFE Foundation, City of San Diego
Planned Projects for Years 3 to 5									
Tier I	Special Studies Pollutants Source ID	Baseline runoff quality monitoring	Port intends to supplement the dischargers monitoring effort to determine the pollutant loading from Port property to the Creek.	TBD	Level 1: Compliance with Activity based TMDL requirements	Report on findings of the monitoring results	What is the Port of San Diego's actual pollutants loading to the Creek?	Start Date: TBD Cost: Medium	All Dischargers
Tier II	LID Pollution Control BMPs: Xeriscaping	TBD	Needs Assessment for conversion of grass area to more permeable drought tolerant, California-friendly landscaping in small landscaped area to reduce water consumption and runoff.	Landscaped area west of Harbor Drive	Level 4 Load Reduction	-	What is the load reduction efficiency of the LID BMP? How effective is the LID BMP at reducing loads of priority pollutants?	Start Date: TBD Cost: TBD	U.S. Navy and NASSCO
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Ongoing Agency-wide Projects for Years 1 to 5									
Tier I	Regulatory/ legislative	Basin Plan Beneficial Use Designation Correction	Identify and delete obsolete/inaccurate Beneficial Use designations in Basin Plan to allow for concentration of efforts achievable BU designation restoration and protection	Listed sections of Chollas Creek and the mouth of Chollas Creek	Level 1 Programmatic Outcomes	-	Are the designated beneficial uses of the creek and mouth of creek appropriate?	Ongoing Cost: Low	All dischargers

Port of San Diego, Appendix B.8-2

TIER (Source)	GENERAL ACTIVITY LIST CAT.	ACTIVITY NAME (Project #)	PROJECT DESCRIPTION	PROJECT LOCATION	TARGET OUTCOME(S)	METHOD OF MEASURE	PHASE I MANAGEMENT QUESTIONS / METHOD OF ASSESSMENT	SCHEDULE	DISCHARGER PARTNER-SHIP OPPORTUNITY
Tier I	Industrial Inspection and Enforcement	Port of San Diego Industrial Inspection Program	The Port of San Diego performs routine inspection and enforcement of industrial facilities as part of its JURMP. There is one industrial facility, NASSCO, within the Port’s portion of the Chollas Creek Watershed. This facility is inspected approximately annually, with follow ups and enforcement performed as necessary.	NASSCO	Level 1 Programmatic Outcomes; Level 3 Behavioral Modification	Level 1 # Inspections, # Violations Observed; Level 3 # Corrective Actions Implemented	Is the site continuing to be in compliance with the industrial requirements of the Port of San Diego’s JURMP?	Ongoing Cost: Low	N/A
Tier I	Industrial Permit Pollution Control BMPs	NASSCO Environmental Practices	The industrial facility on Port of San Diego property identified and implements BMPs in order to maintain compliance with their NPDES industrial permit requiring zero discharge from the facility.	NASSCO	Level 1 Programmatic Outcomes; Level 3 Behavioral Modification	Report	Are the appropriate BMPs installed to ensure zero discharge of pollutants to the Chollas Creek? Is the facility collecting all of their water or discharges?	Ongoing Cost: Low	N/A
Tier I (Residential, Commercial, Boat Repair, Eating and Drinking, Landscaping Pesticides)	Education/ Outreach	Booths at major events	The Port has sponsored booths at the Del Mar Fair and San Diego Boat Show	Chollas Creek Watershed	Level 2: Change in awareness; Level 3: Modification of Behavior through education and outreach	# posted advertisements or pamphlets distributed Results from public opinion/awareness surveys (as applicable)	Are booths at major events an effective outreach tool? What level of awareness does the public have about water quality in Chollas Creek?	Ongoing Cost: Low	All Dischargers Dischargers may provide staff at events.
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* This list is subject to modification based on the availability of resources and results from other Phase I Implementation Plan projects.